



Volunteer Lake Assessment Program Individual Lake Reports

DUBLIN POND, DUBLIN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	750	Max. Depth (m):	31.1	Flushing Rate (yr ⁻¹)	0.2
Surface Area (Ac.):	239	Mean Depth (m):	10.1	P Retention Coef:	0.84
Shore Length (m):	4,500	Volume (m ³):	9,798,500	Elevation (ft):	1479

TROPHIC CLASSIFICATION

Year	Trophic class
1991	OLIGOTROPHIC
2001	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

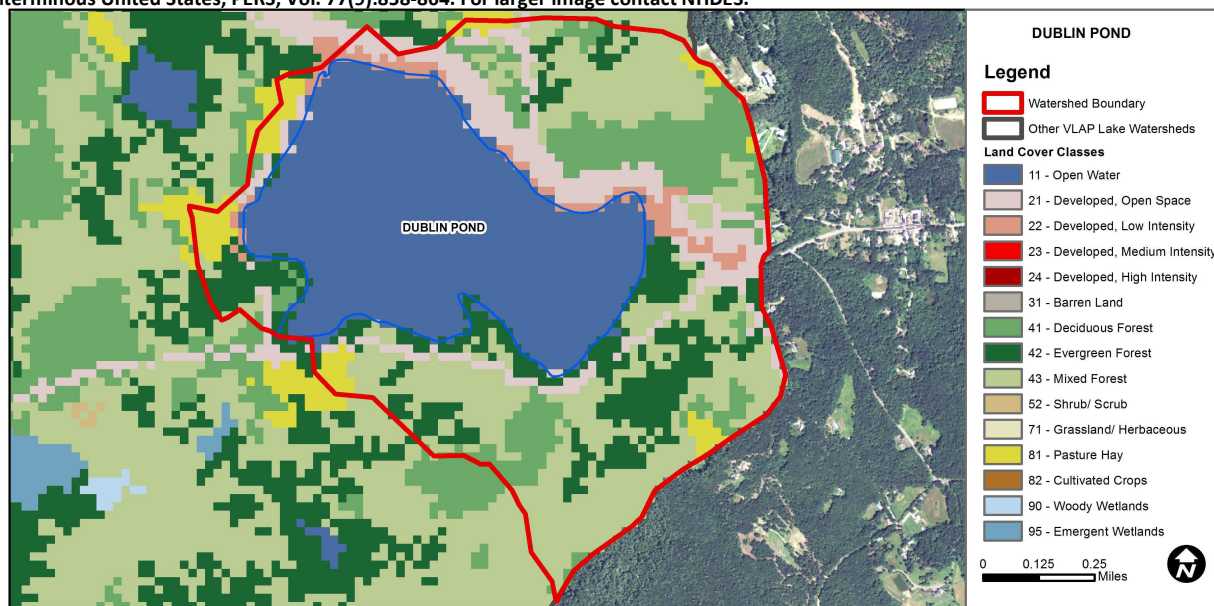
Variable Milfoil

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Very Good	The calculated median is from 5 or more samples and is ≤ 1/2 indicator.
Primary Contact Recreation	Escherichia coli	Good	There are geometric means and all geometric means are < geometric mean criteria; and there has been a single sample exceedance.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	34.6	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	10.1	Deciduous Forest	11.18	Pasture Hay	3.3
Developed-Low Intensity	2.82	Evergreen Forest	13.45	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	24.63	Woody Wetlands	0
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



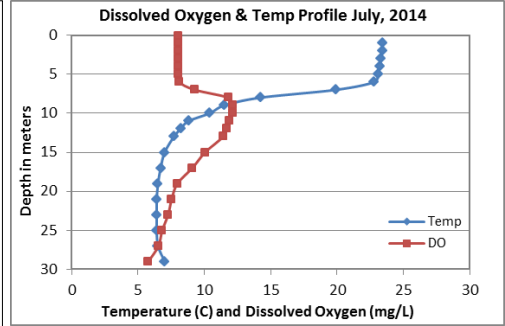
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

DUBLIN LAKE, DUBLIN

2014 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- ◆ **CHLOROPHYLL-A:** Chlorophyll levels remained stable and low from June through August. Average chlorophyll levels were much less than the state median and remained stable from 2013. However, a brief bloom of cyanobacteria occurred in late summer. Conditions conducive to cyanobacteria growth include nutrients (phosphorus and nitrogen), water temperatures, abundant sunlight, and calm water conditions. The cyanobacteria can then be concentrated along shorelines through wind and wave action.
- ◆ **CONDUCTIVITY/CHLORIDE:** Deep spot conductivity and chloride levels remained stable from June through August and were slightly greater than the state medians. Visual inspection of historical data indicates stable epilimnetic (upper water layer) conductivity since monitoring began.
- ◆ **E. COLI:** E. coli levels were very low at all stations monitored and on all sampling events. E. coli levels were much less than the state standards of 88 cts/100 mL for public beaches and 406 cts/100 mL surface waters.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic and Metalimnetic (middle water layer) phosphorus levels were non-detectable in June and July and increased slightly in August, but remained at a low level. Visual inspection of historical data indicates stable epilimnetic phosphorus since monitoring began. Hypolimnetic (lower water layer) phosphorus was low in June and July and also increased in August. This slight increase of phosphorus levels in August may have been enough to promote the cyanobacteria growth. Phosphorus levels at the Boat Landing, Dublin Lake Club and Women's Club were low in June.
- ◆ **TRANSPARENCY:** Transparency was good in July and then decreased in August, potentially due to cyanobacteria growth. Lake transparency remained much better than the state median, however transparency has also remained lower since 2012. Visual inspection of historical data indicates slightly variable transparency since monitoring began.
- ◆ **TURBIDITY:** Deep spot turbidity levels remained fairly stable and low from June to August.
- ◆ **PH:** Epilimnetic pH levels were within the desirable range 6.5-8.0 units, however metalimnetic and hypolimnetic pH levels decreased below desirable levels.
- ◆ **RECOMMENDED ACTIONS:** The brief cyanobacteria bloom serves as a reminder of the delicate balance of a lake's ecosystem. Although phosphorus levels were in a low range, cyanobacteria can also take advantage of nitrogen in the water column and often out-compete other algae for nutrients. Nutrient cycling in a lake is a complex process and collecting nitrogen data may provide insight into the ratio of nitrogen and phosphorus in the lake. Contact the V LAP Coordinator if this is something you are interested in. The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff in the watershed. Install stormwater best practices to help capture and infiltrate stormwater prior to entering the lake to help reduce nutrient loading and sediment transport to the lake. Keep up the great work!



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: > 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: between 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

Station Name	Table 1. 2014 Average Water Quality Data for DUBLIN POND									pH
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu	
							NVS	VS		
Epilimnion	4.87	1.30	14	73.7		4	5.88	6.46	0.72	6.76
Metalimnion				75.3		4			0.75	6.29
Hypolimnion				76.1		5			0.56	6.40
Boat Landing					10	6				
Dublin Lake Club					10	3				
Women's Club					10	3				
Wright Culvert					10					

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.

